

REMARKS

Claims 1-19, 23, 24, 30 and 32-34 are pending in the application.

Claims 1-17 and 34 are withdrawn. Claims 18, 19, 23, 24, 30, 32 and 33 are rejected

Rejection Under 35 U.S.C. § 103(a)

Claims 18, 19, 23, 24, 30, 32 and 33 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim et al. (U.S. 6,335,003), in further view of Munzmay et al. (U.S. 5,153,297).

Applicants disagree. It is not obvious to combine Munzmay with Kim, since there are no teachings or suggestions in these references supporting the combination. Munzmay discloses polyurethane for use in textiles whereas the Kim invention relates to hair fixing agents. The presently claimed invention provides amphiphilic polyurethanes having cationic terminal ammonium groups bearing hydrophobic groups with excellent thickening and cosmetic properties. The present invention does not naturally flow from a combination of the prior art teachings.

While Munzmay introduces cationic groups in the form of terminal or lateral amino groups, the polyurethane also contains polyetherester groups. This combination of cationic groups and polyetherester groups taken with the teachings of Kim, would not lead one of ordinary skill in the art to the present invention.

The presently claimed invention teaches one or more hydrophilic parts and at least two hydrophobic parts at both ends according to formula I. The aim of this structure is to get an amphiphilic associative polyurethane wherein the hydrophilic parts render the polymer soluble in water and the hydrophobic parts allow the polymer to interact and combine with one another (see page 2, penultimate paragraph).

Kim and Munzmay do not disclose polyurethanes with the claimed structure. Indeed, Kim discloses a polymer with several and successive monomers (a) and (b) as defined in column 2, lines 18 to 24, and Munzmay discloses a polyetherester-modified polyurethane.

While Munzmay discloses cationic groups in the polyurethane in the form of secondary or primary amines terminally and/or laterally incorporated in the polymer, there is no teaching or suggestion that the cationic ammonium groups be introduced at both ends of the polyurethane. In particular, the cationic groups are introduced inside the polymer or incorporated at only one end, or may be incorporated at only one end or may be both laterally and terminally incorporated.

Rejection Under 35 U.S.C. § 112

Claims 18, 19, 23, 24, 30, 32 and 33 have been amended deleting “or a quaternized cationic amines have a corresponding anion which optionally is comprised of a hydrophobic group”.

Claims 23 and 30 have been amended deleting “between about 400 and about 100,000” and about 40,000 to 80,000”.

Claim 18 has been amended deleting L” and deleting the term “substantially”.

Formula I in claim 18 has been amended to include R and R’ providing antecedent basis for claim 19.

CONCLUSION

Kim and Munzmay do not teach or lead to a polymer according to the formula I of the present invention. Applicants respectfully submit that claims 18, 19, 23, 24, 27, 28 and 30-33 are not prima facie obvious over Kim in view of Munzmay.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

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